



PATENT APPLICATION
Q68205

IN THE UNITED STATES PATENT & TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Ikuo KAWAMOTO, *et al.*

Appln. No.: 10/031,871

Group Art Unit: 2871

Confirmation No.: 8685

Examiner: Tarifur Rashid Chowdhury

Filed: January 24, 2002

For: POLARIZING MEMBER HAVING A CHOLESTERIC LIQUID-CRYSTAL LAYER

SUBMISSION OF APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS


Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief (in triplicate). A check for the statutory Appeal Brief fee of \$500.00 is attached. The USPTO is directed and authorized to charge all additional required fees (except the Issue/Publication Fees) to our Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is also attached.

Respectfully submitted,

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Date: February 28, 2006



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BRIEF ON APPEAL UNDER 37 C.F.R. §41.37

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. §41.37, Appellants submit the following

Appeal Brief in reply to the Examiner's Final Rejection of claims 1 and 3-10:

03/01/2006 JADD01 00000097 10031871

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I. REAL PARTY IN INTEREST

The real party in interest is Assignee Nitto Denko Corporation of Osaka, Japan, by way of an Assignment recorded on January 24, 2002, at Reel 012758, Frame 0155.

II. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences or judicial proceedings known to Appellants, the Appellants' legal representative, or Assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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III. STATUS OF CLAIMS

Claims 1 and 3-10 have been rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

On September 29, 2005, the Examiner issued a Final Office Action. In response to the Final Office Action, Appellants filed a Notice of Appeal on December 29, 2005. No amendments have been made subsequent to the September 29 Final Office Action. Accordingly, the claims stand as presented before the September 29 Final Office Action.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

One embodiment of the present invention, as set forth in independent claim 1, relates to a polarizing member including a cholesteric liquid-crystal layer, a quarter-wave plate, an optical rotatory film and an absorption type polarizer. The quarter-wave plate is interposed between the cholesteric liquid-crystal layer and the optical rotatory film with the optical rotatory film being a solid film laminated on the quarter-wave plate. The absorption type polarizer is disposed on an upper side of the optical rotatory film so that the optical rotatory film is interposed between the quarter-wave plate and the absorption type polarizer.

For example, as shown in the non-limiting embodiment of Fig. 2, a quarter-wave plate is disposed between a cholesteric LCD layer 1 and a rotatory layer 3. An absorption type polarizer 4 is disposed on an upper side of the rotatory layer 3, so that the rotatory layer 3 is disposed between the quarter-wave plate 2 and the absorption type polarizer 4. The rotatory layer 3 can be made of various materials, including a polymer containing a nematic liquid-crystal monomer and an optically active monomer and is attached to the quarter-wave plate through an adhesive layer.¹

In a non-limiting embodiment of the specification, light emitted from a light source can be made incident on the cholesteric LCD so that circularly polarized light is transmitted.² The

¹ See specification page 6, line 8 to page 7, line 18 and page 12, lines 13-15.

² See specification page 4, lines 7-18.

circularly polarized light can then be linearly polarized by the quarter-wave plate 2 so that the light will not be absorbed by the absorption type polarizer 4.³ The light that exits the quarter-wave plate 2 is then controlled by the optical rotatory layer 3.⁴ The absorption type polarizer 4 is disposed on the rotatory layer 3.⁵ The particular positions of the elements allow them to desirably control the light. For example, by placing the quarter-wave plate 2 between the cholesteric LCD layer 1 and the rotatory layer 3, the quarter-wave plate receives light that is circularly polarized and the rotatory layer 3 receives light that has been both circularly polarized by the cholesteric LCD 1 and linearly polarized by the quarter-wave plate 2.

³ See specification page 5, lines 3-13.

⁴ See specification page 6, lines 2-13.

⁵ See specification page 8, lines 21-23.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1st Ground of Rejection

The Examiner rejected claims 1 and 3-6 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,032,218 to Scheffer in view of European Patent Application No. 0457607 to Itoh *et al.*

2nd Ground of Rejection

The Examiner rejected claims 1 and 3-10 under 35 U.S.C. §103(a) as being unpatentable over JP 09-329779 to Kishimoto in view of European Patent Application No. 0457607 to Itoh *et al.*

VII. ARGUMENT

1st Ground of Rejection

The Examiner rejected claims 1 and 3-6 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,032,218 to Scheffer in view of European Patent Application No. 0457607 to Itoh *et al.* Appellants respectfully traverse this rejection because the combination of Scheffer and Itoh fails to teach or suggest all the elements as set forth in the claims.

Claims 1 recites an optical rotatory film that is a solid film. Since the alleged Scheffer optical rotatory film (liquid crystal cell 3) is a liquid crystal layer, it is not a solid film as set forth in claim 1. Although Scheffer does not teach a solid optical rotatory film, the Examiner asserts that Itoh would still teach this feature. Additionally, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to have substituted the liquid crystal cell of Scheffer with the rotatory layer of Itoh.⁶ However, one of ordinary skill in the art would not have been motivated to modify Scheffer with Itoh as suggested by the Examiner.

It is an essential requirement for the invention of Scheffer that the liquid crystal cell is a liquid-crystal state. This is necessary for the Scheffer liquid crystal cell 3 to function as a liquid

⁶ See section 5, page 3 of the Final Office Action dated September 29, 2005.

crystal cell. Therefore, one of ordinary skill would not have been motivated to substitute the liquid crystal cell of Scheffer (liquid crystal state) with the optical rotatory layer (solid).

The Examiner maintains that the modification of Scheffer is proper because Scheffer discloses that the liquid crystal layer 7 can be replaced with a solid one.² However, the Examiner's assertion is improper at least because he does not propose replacing Scheffer liquid crystal layer 7 with a solid film. Indeed, the Examiner asserts that Scheffer liquid crystal cell 3 constitutes the claimed optical rotatory film and attempts to replace the Scheffer liquid crystal cell 3, not the crystal layer 7, with the Itoh optical rotatory film.⁸ Therefore, the Examiner's reliance on column 4, lines 1-2 of Scheffer is misplaced. Because the Examiner's reliance on Scheffer is misplaced, there is no evidence that the Scheffer liquid crystal cell 3 can be replaced with a solid optical rotatory film as asserted by the Examiner.

In view of the above, Appellants submit that claim 1 is allowable over the combined teachings and suggestions of Scheffer and Itoh. Furthermore, claims 3-6 depend from claim 1 and are, therefore, allowable at least because of their dependency. Accordingly, Appellants

² See the first paragraph on page 7 of the September 29 Office Action and column 4, lines 1-2 of Scheffer.

⁸ See section 5, page 2 of the September 29 Final Office Action indicating that the Examiner considers Scheffer liquid crystal cell 3 as the claimed optical rotatory film.

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respectfully request that the Board of Patent Appeals and Interferences reverse the rejection of claims 1 and 3-6 as unpatentable over the combination of Scheffer and Itoh.

2nd Ground of Rejection

The Examiner rejected claims 1 and 3-10 under 35 U.S.C. §103(a) as being unpatentable over JP 09-329779 to Kishimoto in view of European Patent Application No. 0457607 to Itoh *et al.* Appellants respectfully traverse this rejection because the combination of Scheffer and Itoh fails to teach or suggest all the elements as set forth in the claims.

The Examiner acknowledges that Kishimoto is deficient with regard to the claimed invention because it does not disclose the claimed optical rotatory film.² The Examiner asserts that one of ordinary skill in the art would have been motivated to modify Kishimoto with Itoh in order to provide azimuthal rotation.¹⁰ Initially, the Examiner's motivation is insufficient because the Examiner has not provided any indication of how the azimuthal rotation would be desirable in Kishimoto. Merely stating that one of ordinary skill in the art would have been motivated to modify Kishimoto with Itoh to provide for azimuthal rotation is not proper motivation absent reasoning or evidence that such rotation would be desirable as applied to Kishimoto. For example, the Examiner has not explained how the azimuthal rotation would be beneficially utilized in Kishimoto or how it would affect the operation of the Kishimoto device as a whole.

² See section 7, page 4 of the September 29 Final Office Action.

¹⁰ See section 7, pages 4 and 5 of the September 29 Final Office Action.

Since the Examiner has provided no suggestion as to why azimuthal rotation would be desirable in Kishimoto, the Examiner's stated motivation is deficient.

Furthermore, the Examiner also fails to establish that the particular location of the plate would have been obvious to one of ordinary skill in the art. The Examiner asserts that since Itoh teaches the use of an optical rotatory layer to achieve rotation of polarization and Kishimoto discloses a polarizing member having a cholesteric liquid crystal layer and a quarter-wave plate, it would have been obvious to have put the Itoh quarter-wave plate in between the Kishimoto cholesteric liquid crystal layer and the optical rotatory layer.¹¹ However, this reasoning does not explain why one of ordinary skill in the art would have arranged the elements as particularly claimed. The Examiner merely asserts that because Kishimoto has a cholesteric liquid crystal layer and a quarter-wave plate, that it would have been obvious to put the quarter-wave plate between Itoh's optical rotatory layer and the cholesteric LCD layer. However, the mere presence of a cholesteric liquid crystal layer and a quarter-wave plate in Kishimoto does not lead to this placement. For example, if Itoh were used to modify Kishimoto, the quarter-wave plate could be placed on the opposite side of the polarizer Kishimoto polarizer 5. In fact, the only motivation for the claimed placement comes from the present application, and the Examiner's asserted combination of Kishimoto and Itoh is based on improper hindsight reasoning. Since the Examiner

¹¹ See pages 5 and 7 of the September 29 Final Office Action.

has failed to identify proper motivation for the particular placement claimed, *prima facie* obviousness has not been established, and claim 1 is allowable over the combination of Kishimoto and Itoh. Claims 3-10 depend from claim 1 and are, therefore, allowable at least because of their dependency.

At least for the above reasons, Appellants submit that the Examiner's rejection of claims 1 and 3-10 as unpatentable over the combination of Kishimoto and Itoh is also improper. Accordingly, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse this rejection.

Conclusion

Unless a check is submitted herewith for the fee required under 37 C.F.R. §§41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

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The USPTO is directed and authorized to charge all required fees (except the Issue/Publication Fees) to our Deposit Account No. 19-4880. Please also credit any over-payments to said Deposit Account.

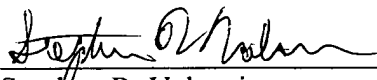
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CLAIMS APPENDIX

CLAIMS 1 AND 3-10 ON APPEAL:

1. A polarizing member comprising:
a cholesteric liquid-crystal layer,
a quarter-wave plate,
an optical rotatory film, wherein said quarter-wave plate is interposed between said cholesteric liquid-crystal layer and said optical rotatory film, said optical rotatory film being laminated on said quarter-wave plate through an adhesive layer and said optical rotatory film being a solid film, and
an absorption type polarizer disposed on an upper side of said optical rotatory film, so that said optical rotatory film is interposed between said quarter-wave plate and said absorption type polarizer.
3. A polarizing member according to claim 1, wherein a major or minor axis of said optical rotatory film in each of opposite surfaces of said optical rotatory film is parallel to a plane of polarization of light linearly polarized by a combination of said cholesteric liquid-crystal layer and said quarter-wave plate and to an axis of polarization of said absorption type polarizer.

4. A polarizing member according to claim 1 or 3, wherein said optical rotatory film is made of a polymer containing a nematic liquid-crystal monomer and an optically active monomer as components.

5. A polarizing member according to claim 1 or 3, wherein said optical rotatory film exhibits an angle of rotation satisfying an expression:

$$(2n + 1)\pi/4$$

in which n is an integer.

6. A polarizing member according to claim 4, wherein said optical rotatory film exhibits an angle of rotation satisfying an expression:

$$(2n + 1) \pi/4$$

in which n is an integer.

7. A liquid-crystal display device comprising a polarizing member as defined in claim 1 or 3, and a liquid-crystal cell, said polarizing member being disposed on a back side (opposite to a visual side) of said liquid-crystal cell.

8. A liquid-crystal display device comprising a polarizing member as defined in claim 4, and a liquid-crystal cell, said polarizing member being disposed on a back side (opposite to a visual side) of said liquid-crystal cell.

9. A liquid-crystal display device comprising a polarizing member as defined in claim 5, and a liquid-crystal cell, said polarizing member being disposed on a back side (opposite to a visual side) of said liquid-crystal cell.

10. A liquid-crystal display device comprising a polarizing member as defined in claim 6, and a liquid-crystal cell, said polarizing member being disposed on a back side (opposite to a visual side) of said liquid-crystal cell.

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EVIDENCE APPENDIX

There has been no evidence submitted pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132 or any other similar evidence.

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RELATED PROCEEDINGS APPENDIX

There are no related proceedings.